AMENDMENTS TO THE CLAIMS

Please amend the claims as presented below in the Listing of Claims. This Listing of Claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1-115.   (Cancelled)

116.   (Original)   An apparatus in a wireless multiple-access multiple-input multiple-output (MIMO) communication system, comprising:

a transmit data processor operative to

process system parameters and a pilot for transmission via a broadcast channel, wherein the pilot is used for channel estimation of the downlink,

process scheduling information for transmission via a forward control channel, wherein the scheduling information is for data transmission on the downlink and an uplink, and

process traffic data for transmission via a forward channel; and

a receive data processor operative to

process user requests received via a random access channel, and

process traffic data received via a reverse channel.

117.   (Original)   The apparatus of claim 116, wherein the broadcast channel, forward control channel, forward channel, random access channel, and reverse channel are time division multiplexed within a frame having a predetermined time duration.

118.   (Original)   The apparatus of claim 116, wherein the broadcast channel and the forward control channel are transmitted using a diversity mode supporting data transmission with redundancy from a plurality of transmit antennas.

119.   (Original)   The apparatus of claim 116, wherein the forward channel and the reverse channel support a diversity mode and a spatial multiplexing mode, the diversity mode supporting data transmission with redundancy from a plurality of transmit antennas, and the spatial multiplexing mode supporting data transmission on a plurality of spatial channels.

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120.   (Original)   The apparatus of claim 116, wherein the random access channel supports a single-input multiple-output (SIMO) mode and a beam-steering mode, the SIMO mode supporting data transmission from a single transmit antenna to multiple receive antennas, and the beam-steering mode supporting data transmission on a single spatial channel associated with a highest rate among a plurality of spatial channels.

121.   (Original)   An apparatus in a wireless multiple-access multiple-input multiple-output (MIMO) communication system, comprising:

    means for processing system parameters and a pilot for transmission via a broadcast channel, wherein the pilot is used for channel estimation of the downlink;

    means for processing scheduling information for transmission via a forward control channel, wherein the scheduling information is for data transmission on the downlink and an uplink;

    means for processing traffic data for transmission via a forward channel;

    means for processing user requests received via a random access channel; and

    means for processing traffic data received via a reverse channel.

122.   (Currently Amended) The ~~channel structure~~ apparatus of claim 121, wherein the broadcast channel, forward control channel, forward channel, random access channel, and reverse channel are time division multiplexed within a frame having a predetermined time duration.

123.   (Currently Amended) The ~~channel structure~~ apparatus of claim 121, wherein the broadcast channel and the forward control channel are transmitted using a diversity mode supporting data transmission with redundancy from a plurality of transmit antennas.

124.   (Currently Amended) The ~~channel structure~~ apparatus of claim 121, wherein the forward channel and the reverse channel support a diversity mode and a spatial multiplexing mode, the diversity mode supporting data transmission with redundancy from a plurality of transmit antennas, and the spatial multiplexing mode supporting data transmission on a plurality of spatial channels.

125.   (Currently Amended) The ~~channel structure~~ apparatus of claim 121, wherein the random

access channel supports a single-input multiple-output (SIMO) mode and a beam-steering mode, the SIMO mode supporting data transmission from a single transmit antenna to multiple receive antennas, and the beam-steering mode supporting data transmission on a single spatial channel associated with a highest rate among a plurality of spatial channels.

126–143.   (Cancelled)

144–216.   (Cancelled)

217.   (Previously Presented)   A computer-program product for a wireless multiple-access multiple-input multiple-output (MIMO) communication system comprising a computer readable medium having a set of instructions stored thereon, the set of instructions being executable by one or more processors and the set of instructions comprising:

        instructions for processing system parameters and a pilot for transmission via a broadcast channel, wherein the pilot is used for channel estimation of the downlink;

        instructions for processing scheduling information for transmission via a forward control channel, wherein the scheduling information is for data transmission on the downlink and an uplink;

        instructions for processing traffic data for transmission via a forward channel;

        instructions for processing user requests received via a random access channel; and

        instructions for processing traffic data received via a reverse channel.

218.   (Previously Presented)   The computer-program product of claim 217, wherein the broadcast channel, forward control channel, forward channel, random access channel, and reverse channel are time division multiplexed within a frame having a predetermined time duration.

219.   (Previously Presented)   The computer-program product of claim 217, wherein the broadcast channel and the forward control channel are transmitted using a diversity mode supporting data transmission with redundancy from a plurality of transmit antennas.

220.   (Previously Presented)   The computer-program product of claim 217, wherein the forward channel and the reverse channel support a diversity mode and a spatial multiplexing

mode, the diversity mode supporting data transmission with redundancy from a plurality of transmit antennas, and the spatial multiplexing mode supporting data transmission on a plurality of spatial channels.

221.   (Previously Presented)   The computer-program product of claim 217, wherein the random access channel supports a single-input multiple-output (SIMO) mode and a beam-steering mode, the SIMO mode supporting data transmission from a single transmit antenna to multiple receive antennas, and the beam-steering mode supporting data transmission on a single spatial channel associated with a highest rate among a plurality of spatial channels.

222-224.   (Cancelled)